

Appl. No. 10/816,384  
Reply to Office Action of December 5, 2005

REMARKS

In the December 5, 2005 Office Action, Claims 1-20 were rejected on several grounds. Each of these is dealt with separately here below. Reconsideration of the application is respectfully requested in view of the following remarks which show that the claims are in condition for Allowance. Should any issues of formality remain that can be dealt with in a telephone conference, the Examiner is invited to call the undersigned.

In addition, if the Examiner is not inclined to reconsider, Applicant notes that the finality of the Office Action appears premature because claim amendments made in September 2005 are not addressed at all. In addition, there are no responses to several arguments that were presented, as pointed out here below. In short, the Office Action does not address issues that it could have and should have addressed.

The Office Action appears to be an almost verbatim copy of the Office Action issued in related 10/766,702 and appears to be very similar to the first Office Action in this application, despite amendments to the claims in the September 2005 Amendment, which are not addressed in this final Office Action.

Section 102 (b) rejection of Claims 1-3, 8-17, 20 and 21

The Office Action asserts that Annan (US 1,333,057) directed to a floor wax composition anticipates Claims 1-3, 8-17 and 20. As Applicant pointed out in the Amendment of September 2005:

The Annan patent issued in 1920 and relates to a wax composition used in sealing stone or concrete floors. Annan teaches "a new composition of matter" consisting of "combining mineral, vegetable and animal waxes with or without coloring matter such as soluble oil dyes or stains or chromic oxid . . ." Col. 1 lines 35-42. In column 2 of the patent, two examples of the composition are set forth. None contain particulates such as powdered metal, metal oxide or metal carbide. The patent teaches that the composition must be heated to about 212° to melt it before being applied, and the porous stone or concrete surface to which it is applied must be

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heated to about 300F so that the heated mixture can penetrate to about  $\frac{1}{2}$  inch below the surface.

Comparing Annan to the limitations of Claim 1 and its dependent claims:

1. Claim 1 recites in its "wherein" clause that the waxy solid is substantially-free of entrained gasses". This feature is not described or addressed at all in Annan, and there is nothing to suggest the mixture of Annan is free of entrained gasses. It is not so much that "no bubbles are disclosed in the mixture" of Annan, as the Examiner points out, but Annan never raises the issue of bubbles nor discusses any deleterious effects. The Examiner's attempt at "reading into" Annan that because it fails to discuss bubbles means it is free of bubbles is not in accord with principles of prior art review: the prior art must teach or show the Claim limitation.
2. Claim 1 recites that heat need not be applied to make the coating homogeneous when applied to a substrate. Annan requires the floor be heated to 300F AND that the composition be heated to 212F to permit penetration into pores of the floor onto which it is coated.
3. Claim 1 specifies an extent of reduction of moisture incursion, into the substrate onto which its composition is coated, as at least about 50% relative to an uncoated substrate. Annan does not address this at all. There is nothing to suggest what the effect of Annan's composition is on moisture incursion, if any.
4. In Claim 1, the wherein clause specifies, with regard to the reduction in moisture loss property of the coating of the composition, that the substrate is a composite that has residual moisture: these materials are not discussed Annan.

To establish anticipation, each and every limitation of a claim must be found in the cited reference. MPEP 2131. As demonstrated above, the Examiner has not addressed each claim limitation. These claim limitations were apparent from a reading of the claims, as amended in September 2005. Accordingly, finality of this Office Action is clearly premature and should be withdrawn.

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Claims 2-3 and 8-13 depend from Claim 1 and therefore include these features of Claim 1 that are not shown in Annan.

Claims 15-16, 19 and 20 all depend from Claim 14. the same 4 points explained above distinguishing Claim 1 and its dependent claims from Annan, apply to these claims as well. The Part (b) and the wherein clause of Claim 14 (and its dependent claims) express the same properties as in the 4 points, and so for brevity, the distinctions will not be repeated.

In general, while Applicant agrees with the Examiner that a "product-by-process" claim is directed to the product, here there is a "wherein clause" that specifies properties of that product. These properties are not "intended uses" but characterize and distinguish the product. The case law holds that "wherein clauses" must be given full weight unlike mere statements of intended use. If the Examiner disagrees, he is invited to cite MPEP sections in support.

Rejection under Section 103(a) of Claims 4-7, 17-19

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation to modify a reference or to combine the teachings of multiple references. Second, there must be a reasonable expectation of success. Third, the prior art must teach or suggest all of the recited claim limitations. Of course, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicant's disclosure. Applicant respectfully submits that the Examiner has not met all of the above criteria.

In addition, the Examiner has cited to *In re Hiyamizu* 10 USPQ 2d 1393, for a different proposition, but the opinion provides appropriate teaching, namely:

"Under 35 U.S.C. 103 where the examiner has relied on the teachings of several references, the test is whether or not the references viewed individually and collectively would have suggested the claimed invention to the person possessing ordinary skill in the art. Note *In re Kaslow*, 707 F.2d 1366, 217 USPQ 1089 (Fed. Cir. 1983). It is to be noted, however, that citing references which merely indicate that isolated elements and/or features recited in the claims are known is not a sufficient basis for concluding that the combination of claimed elements would have been obvious. That is to say, there should be something in the prior art or a convincing line of reasoning in the answer suggesting the desirability of combining the references in such a

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manner as to arrive at the claimed invention. [\*6] Note *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986). Furthermore, it is well settled that where the claimed invention solves a problem, the discovery of the source of the problem and its solution are considered to be part of the "invention as a whole" under 35 U.S.C. 103. Note *In re Kaslow, supra*; *In re Nomiya*, 509 F.2d 566, 184 USPQ 607 (CCPA 1975); and *In re Sponnoble*, 405 F.2d 578, 160 USPQ 237 (CCPA 1979)." (underlining emphasis added).

The examiner's reasoning for combining the Annan floor wax art with the Davidian "protective coating" art is that the "nature of the problem to be solved in each reference is "how to color a wax composition". That problem of coloration is NOT the purpose of particulates in the invention. In the invention, the particulates permit (1) uniform heating of the waxy melt, and (2) the exclusion of gasses from the product. So, the particulates must be present in such quantity as to perform these functions. This is explained in the specification at paragraph 18, for example. Paragraph 18 reads:

"It has been found that a powdered inorganic material must be added to the mixture of aliphatic hydrocarbons to perform a function. Preferably, the powder is selected from powdered metal or metal oxide. The powdered material must be compatible with the polymers of the mixture, and have no deleterious side effects. When added into a molten mixture of the polymers, the additive assists in driving out entrapped air or other gasses, thereby reducing the incidence of occluded air in the composition. The powder also makes the solid more rigid, i.e. more stiff with increased hardness. Air or other gas bubbles in the coating will provide gaps for ingress of moisture and absorption into the composite. It has been found that certain metals and metal oxides provide the function of air exclusion. It is theorized, without being bound, that as the outer layer on a mass of the composition rapidly cools, it applies pressure to subsurface materials thereby driving out any included air. The same function is expected if the composition were to be prepared under gasses other than air. In addition, since metals are electrical conductors, the powdered metal also allows static electrical charge dissipation, thereby preventing the build up of static charge on a composite. This added advantage of static charge dissipation is a useful feature in some composite applications."

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Accordingly, the Examiner has admitted to a mistaken reason for combining references to "solve a problem" that is NOT a problem identified or addressed in the invention. Rather, the problems of uniform heat and degassing are quite different from mere coloration, and neither of the cited references addresses these problems. And so, the references cannot be combined as teachings of how to solve these problems. The particular basic problem solved by the Claimed invention is set forth in the application at paragraphs 13-14:

"While not being bound by any theory, it is now believed that those cured composites that include polymers that produce moisture upon cure, have an internal moisture equilibrium. This equilibrium is affected by loss of moisture from exposed surfaces into the surroundings. The moisture loss at the surface causes migration of moisture to the surface from within the composite, in an effort to maintain the equilibrium, in accordance with Le Chatelier's principle. At some point, the loss of moisture is of such a magnitude, that the equilibrium cannot be maintained, and this leads to internal stresses within the composite material. The time period for such moisture loss-induced stresses to arise varies based on the type of material, and the environment to which it is exposed. Regardless of time, however, the loss of moisture causes cracking and thereby significantly degrades mechanical properties, often rendering the composite unsuitable for its intended purpose.

The invention solves the composite cracking problem by providing a coating composition that minimizes and/or virtually completely eliminates loss of residual moisture from composite surfaces covered with the composition. Thus, a composite will maintain its mechanical properties virtually unchanged, despite prolonged exposure to environmental conditions, as long as these conditions do not adversely affect the integrity of the coating or result in removal of the coating."

Annan does not address this problem, nor does Davidian, the other cited reference. In addition, the combined references must teach all elements of the Claims, but fail to do so.

For example:

1. Claims 4-7 depend from Claim 1 and therefore also include the recitation of the "wherein" clause that the waxy solid is substantially-free of entrained gasses". This

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feature is not described or addressed at all in Annan or Davidian, and there is nothing to suggest the mixtures of Annan or Davidian are free of entrained gasses.

2. Claims 4-7 depend from Claim 1 and therefore also include the recitation of the "wherein" clause that heat need not be applied to make the coating homogeneous when applied to a substrate. Annan requires the floor be heated to 300F AND that the composition be heated to 212F to permit penetration into pores of the floor onto which it is coated. Davidian requires heating the article to which the coating is applied to 150-400F (col 1, lines 66-67) in a hot water tank or steam chamber (col 3 lines 50-53). Applicant respectfully submits that this intense hot water or steam treatment counters any contention that the Davidian coating is intended to reduce moisture loss from a composite. Such hot water or steam heating would be counter productive as applied to some composites that might soften, or become otherwise damaged.
3. Claims 4-7 depend from Claim 1 and therefore also include the recitation of the "wherein" clause which specifies an extent of reduction of moisture loss from the substrate that has residual moisture due to a cure reaction. Annan does not address this at all. There is nothing to suggest what the effect of Annan's composition is on moisture loss, if any, from the stony floor to which it applied. Further, as discussed in point 2 above, Davidian has no interest in preventing moisture loss, and also does not address composites with residual moisture from cure reactions.

Claims 17 and 18 depend from Claim 14, and Claim 14 recites several features not shown in the combined art, that are necessarily incorporated into Claims 17 and 18. Thus, the claims recite that the coating composition has the property of substantially preventing the development of cracks in a cured composite that is prone to moisture loss. Neither Annan nor Davidian addresses moisture incursion prevention. Neither of them teaches anything about composite materials that are subject to loss of residual moisture from a cure reaction, and how to prevent that loss to prevent cracking of the composite. Neither of them teaches adding a sufficient amount of a powdered additive to permit uniform heating of the mixture and to provide compression during cooling to exclude gasses from the product composition. According to the Examiner, the cited references merely add a colorant. Neither add sufficient of a powdered

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additive to exclude occluded gasses from the cooled mass or address the uniform heating issue. In both references heating is required (of the composition and the article to be coated) BUT in Claims 17 and 18, "heating is not needed to render homogeneous a coating of the composition as applied composite". These differences are such that the Examiner has not made out a prima facie case and should in fairness withdraw the rejection. These differences were clear and apparent after the first Amendment in September 2005, and the Examiner has not addressed any of these claim limitations. Accordingly, Applicant submits that the finality of the rejection was premature and it should be reconsidered, or the claims should be allowed as they are patentable over the cited art.

Rejection under Section 101 of Claims 1-20

This basis for rejection appears to be provisional, and is based in "obviousness" double patenting.

Applicant points out as in the previous Amendment of 2005 that the claims in the co-pending application are neither the same nor obvious in view of each other: A major and specific difference is that while the compositions of this application prevent loss of moisture from a composite, where the moisture is from a cure reaction, those of 10/ 766,702 relate to a composition that reduces moisture incursion into substrates.

If it is the examiner's position that preventing moisture incursion is the same as preventing moisture loss, he must make a showing that this is the case. Rejection of claims cannot rest on mere unsupported opinion. There are manifest examples where prevention of moisture incursion differs from prevention of moisture loss. For example, as indicated before, skin moisturizers prevent moisture loss from skin, but are formulated to not provide a barrier, or not to prevent, moisture from migrating into the skin, through the moisturizer composition coating on the skin. It does not necessarily follow then that a composition that prevents moisture loss also necessarily prevents moisture in-migration through the composition. Much depends upon the chemistry of the composition. The Examiner has not addressed this argument presented in the previous Amendment.

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A further illustration is that certain fruits will dry out under low humidity conditions. The moisture passes out through the "coating" or skin of the fruit. These fruits do NOT re-hydrate in high humidity air but must be immersed in water, usually hot water, to be re-hydrated. Thus the natural coatings allowed moisture to escape from the fruit, but prevent moisture incursion into the fruit despite higher moisture (humidity) in the air than in the fruit. Only extreme conditions permit moisture incursion: usually by boiling water, which may destroy the skin or "coating".

Since the grounds for double patenting rejection are provisional at this point, applicant reserves the right to respond further, in the event the Examiner does not reconsider and withdraw this basis for claim rejection. In addition, Applicant reserves the right to Petition the Commissioner regarding premature finality of the Office Action which does not address express claim terms added in the last Amendment.

In conclusion, for the reasons given above, all claims now present in the application are believed allowable and such allowance is respectfully requested. Should the Examiner have any questions or wish to further discuss this application, Applicants request that the Examiner contact the undersigned attorney at (480) 385-5060 ext 401.

If for any reason Applicants have not requested a sufficient extension and/or have not paid a sufficient fee for this response and/or for the extension necessary to prevent abandonment on this application, please consider this as a request for an extension for the required time period and/or authorization to charge Deposit Account No. 50-2091 for any fee which may be due.

Respectfully submitted,

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